This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1.   (Currently Amended) A computer program analysis method comprising the steps:

analyzing a computer program to generate an initial error report and a list of ~~suspected error~~ conditions <u>for suspected errors</u>; and

generating a set of assertions and inserting the assertions into the computer program<u>;</u> ~~to determine if the suspected error conditions are valid.~~

<u>re-executing the computer program, with said assertions therein, while monitoring for the conditions for the suspected errors; and</u>

<u>if, during the re-executing step, the conditions for one of the suspected errors are satisfied, then generating a second error report indicating that said one of the suspected errors is a true error.</u>

Claim 2 (Cancelled).

3.   (Original) A method according to Claim 1, further comprising the steps of:

testing the computer program for any user supplied test cases; and

if there are user supplied test cases, determining if the test cases lead the program execution to satisfy the suspected error conditions.

Claim 4 (Cancelled).

5.   (Original) A method according to Claim 1, wherein the generating step includes the steps of:

generating an assertion for each of the errors and suspected errors; and

inserting into the computer program assertions for all of said errors and suspected errors.

6.   (Original) A method according to Claim 1, wherein the step of analyzing the computer program includes the step of attempting to resolve the Boolean conditions that determine the program's control flow and execution.

7.   (Original) A method according to Claim 6, wherein the step of attempting to resolve the Boolean conditions includes the step of using a strong static analysis to analyze the computer program.

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8.   (Original) A method according to Claim 1, wherein the step of analyzing the computer program includes the step of using a program verifier to analyze the computer program.

9.   (Currently Amended) A system for analyzing a computer program comprising:

an analyzer means for analyzing a computer program to generate an initial error report and a list of ~~suspected error~~ conditions <u>for suspected errors</u>; ~~and~~

an assertion generator for generating a set of assertions and inserting the assertions into the computer program<u>; and</u> ~~to determine if the suspected error conditions are valid.~~

<u>a re-execution for re-executing the computer program, with said assertions therein, while monitoring for the conditions for the suspected errors; and if, during said re-executing, the conditions for one of the suspected errors are satisfied, for then generating a second error report indicating that said one of the suspected errors is a true error.</u>

Claim 10 (Cancelled).

11.   (Original) A system according to Claim 9, further comprising:

a tester for testing the computer program for any user supplied test cases; and if there are user supplied test cases, for determining if the test cases lead the program execution to satisfy the suspected error conditions.

12.   (Original) A system according to Claim 11, wherein, if the test cases lead the program execution to satisfy the suspected error conditions, then the assertion generator uses the assertions to determine if the suspected error occurs.

13.   (Original) A system according to Claim 9, wherein the assertion generator generates an assertion for each of the errors and suspected errors, and inserts into the computer program assertions for all of said errors and suspected errors.

14.   (Original) A system according to Claim 9, wherein the analyzer means analyzes the computer program by attempting to resolve the Boolean conditions that determine the program's control flow and execution.

15.   (Original) A system according to Claim 14, wherein the analyzer means uses a strong static analysis to analyze the computer program.

16.   (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for analyzing a computer program, said method steps comprising:

analyzing a computer program to generate an initial error report and a list of ~~suspected error~~ conditions <u>for suspected errors</u>; ~~and~~

generating a set of assertions and inserting the assertions into the computer program; ~~to determine if the suspected error conditions are valid.~~

re-executing the computer program, with said assertions therein, while monitoring for the conditions for the suspected errors; and

if, during the re-executing step, the conditions for one of the suspected errors are satisfied, then generating a second error report indicating that said one of the suspected errors is a true error.

Claim 17 (Cancelled).

18.   (Original) A program storage device according to Claim 16, wherein said method steps further comprise the steps of:

testing the computer program for any user supplied test cases; and

if there are user supplied test cases, determining if the test cases lead the program execution to satisfy the suspected error conditions; and wherein

the step of inserting the assertions into the computer program includes the step of, if the test cases lead the program execution to satisfy the suspected error conditions, then using the assertions to determine if the suspected error occurs.

19. (Original) A program storage device according to Claim 16, wherein the generating step includes the steps of:

generating an assertion for each of the errors and suspected errors; and

inserting into the compute program assertions for all of said errors and suspected errors.

20. (Original) A program storage device according to Claim 16, wherein the step of analyzing the computer program includes the step of using a strong static analysis to attempt to resolve the Boolean conditions that determine the program's control flow and execution.

21. (Original) A program storage device according to Claim 16, wherein the step of analyzing the computer program includes the step of using a program verifier to analyze the computer program.

22. (New) A method according to Claim 21, wherein the step of generating a set of insertions includes the steps of:
i) inputting said list of conditions into an assertion generator, and
ii) using the assertion generator (i) to produce said assertions and (ii) to insert said assertions into the computer program; and
the step of generating a second error report includes the step of using said assertions when inserted into the computer program, to generate the second error report.

23.   (New) A method according to Claim 22, wherein the step of using the assertion generator includes the further step of using the assertion generator to insert into the computer program a call to an error handling routine, said call being inserted into the computer program at a point in the program that is after said second error report is generated and before said one of the suspected errors occurs